The interview kindly granted by the Examiner, Mr. Hendricks, on August 28, 2002 is herewith acknowledged with appreciation. It served to materially advance the prosecution of the case by clarifying the issues. Agreement was reached that the amendment of the claims would appear to overcome their rejection under 35 U.S.C. 112, paragraph 2.

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nagata et al.

It is submitted that in view of the amendment to the claims, this rejection has been obviated. Specifically, 7-22% salt water being employed in an amount of 1.35 have 1.65 times the weight of the raw material mixture is not so identically disclosed by the reference. While such limitations may be within the broad scope of Nagata et al, nevertheless, such is not identically disclosed therein, this being necessary for rejection for anticipation, within the meaning of 35 U.S.C. § 102. Note In re Arkley, 172 USPQ 524.

Further, even considering the rejection as having been made under 35 U.S.C. § 103, it equally lacks viability. Thus, the invention relates to a method for preparing a light colored seasoning liquid, comprising forming a Koji-making material comprising a raw material mixture comprising (a) a first component comprising 0-40% soybeans and (b) a second component comprising 60-100% gluten and wheat, wherein the gluten is present in an amount of 25-100%, the wheat is present in an amount 0-75% relative to the total of the gluten-containing second component, the percentages being on a dry weight basis, adding 7-22% salt water to said koji making material and subjecting the resulting mixture to fermentation by adding seed Koji, wherein the salt water is employed in an amount 1.35-1.65 times the weight of the raw material mixture.

As so disclosed at page 6 of the specification and so demonstrated by the results set forth in Table 3 at page 10 of the specification, when the volume of the salt water added is

1.35-1.65 times the weight of the raw material mixture, even more remarkable results can be obtained with regard to JAS color code, total nitrogen (TN) content, glutamic acid (GLU) content and the amount of glutamic acid per unit amount of nitrogen. This result-effectiveness due to this claim limitation is neither disclosed by, nor obvious from, the teaching of the reference. It rebuts any possible *prima facie* case of obviousness conceivably made out by Nagata et al. Note In re Antonie, 195 USPQ 6. The Examiner thus agreed to reconsider his position in light of this showing.

Withdrawal of the rejection of the claims under 35 U.S.C. § 102 thus is requested.

With regard to the rejection of the claims under the second paragraph of 35 U.S.C. § 112, agreement was reached that the amendment of claims would appear to overcome this rejection.

Should any further amendment to the claims be considered necessary by the Examiner, he is requested to telephonically contact the undersigned so that mutually agreeable language may be arrived at.

Withdrawal of the rejection of the claims under the second paragraph of 35 U.S.C. § 112, thus is requested.

It is submitted that the claims are in condition for allowance and which is solicited.

Respectfully submitted,

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IN THE CLAIMS

--1. (Amended) A method for preparing a light colored seasoning liquid, comprising forming a Koji-making material comprising a raw material mixture comprising (a) a first component comprising 0-40% soybeans and (b) a second component comprising 60-100% gluten and wheat, wherein the gluten is present in an amount of 25-100%, the wheat is present in an amount 0-75% relative to the total of the gluten-containing second component, the percentages being on a dry weight basis [characterized by comprising koji-making by the employment of a raw material mixture containing soybeans or a similar material in an amount of 0-40% and, in an amount of 100-60%, raw material consisting of, on a dry weight basis, 25-100% gluten and 75-0% wheat], adding 7-22% salt water to [and subjecting a resultant] said koji [product] making material and subjecting the resulting mixture [7-24% salt water] to fermentation by adding seed Koji, wherein the salt water is employed in an amount 1.35-1.65 times the weight of the raw material mixture.

2. (Cancelled).

3. (Amended) The method for preparing a light colored seasoning liquid according to claim 1 [or 2], wherein the fermentation is carried out for 2-3 months at 10°C; or for about one month at 10°C and subsequently for a further 1-2 months at 20°C.

4-5. (New).--

In re Arkley, Eardley, and Long

(CCPA)
172 USPQ 524

Decided Feb. 17, 1972
No. 8553
U.S. Court of Customs and Patent Appeals

Headnotes

PATENTS

1. Patentability - Anticipation - In general (§ 51.201)

Patentability - Invention - In general (§ 51.501)

Fact that rejections under 35 U.S.C. 103 are proper where subject matter claimed "is not identically disclosed or described" in prior art indicates that rejections under section 102 are proper only when claimed subject matter is identically disclosed or described in prior art.

2. Court of Customs and Patent Appeals - In general (§ 28.01)

Court does not grant patent where it reverses rejection of claim; it is Patent Office which grants patents, not the court.

3. Court of Customs and Patent Appeals - In general (§ 28.01)

Pleading and practice in Patent Office - Rejections (§ 54.7)

Court's reversal of rejection of claim on ground that it is anticipated by reference under 35 U.S.C. 102 leaves Patent Office free to reject claim as obvious under section 103 in view of

reference since such latter rejection was not before court.

4. Court of Customs and Patent Appeals - Weight given decisions below (§ 28.35)

It is not court's practice to apply a different standard in cases in complex areas of technology than it does in easily understood cases.

Particular patents-Cephaloridine

Arkley, Eardley, and Long, Cephaloridine, rejection of claim 30 reversed.

Case History and Disposition:

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Appeal from Board of Appeals of the Patent Office.

Application for patent of Vincent Arkley, Stephen Eardley, and Alan Gibson Long, Serial No. 329,212, filed Dec. 9, 1963; Patent Office Group 120. From decision rejecting claim 30, applicants appeal. Reversed; Baldwin, Judge, concurring with opinion in which

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Almond, Judge, joins; Worley, Chief Judge, dissenting with opinion.

Attorneys:

J. William Pike and Bacon & Thomas, both of Washington, D. C. (Fred T. Williams, John J. Cavanaugh, and Pendleton, Neuman, Williams & Anderson of counsel) for appellants.

S. Wm. Cochran (Jack E. Armore and Henry Willard Tarring II of counsel) for Commissioner of Patents.

Judge:

Before Worley, Chief Judge, and Rich, Almond, Baldwin, and Lane, Associate Judges.

Opinion Text

Opinion By:

Rich, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claim 30 in appellants' application serial No. 329,212, filed December 9, 1963, for a cephalosporin-type antibiotic known as cephaloridine. No claim has been allowed. We reverse.

The Subject Matter Claimed

The appealed claim is drawn to a single compound, by structural formula, and reads:

30. A compound of the formula
Graphic material consisting of a chemical formula or diagram set at this point is not available. See text in hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

This compound is said to be a broad spectrum antibiotic, effective against both gram-positive and gram-negative micro-organisms, and to possess many other virtues not relevant here because of the nature of the rejection.

The Rejection

Appellants' claim has been rejected as *anticipated* by U. S. patent No. 3,218,318, issued to Edwin H. Flynn November 16, 1965, on an application filed in the United States August 31, 1962, and available against appellants' application by virtue of 35 U.S.C. 102(e) as of its filing date. This reference discloses generically a class of cephalosporin-type compounds having the following structural formula:
Graphic material consisting of a chemical formula or diagram set at this point is not available. See text in hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

in which R 1, taken alone, is -OH, C 1-C 8acyloxy, or tertiary-amino, R 2is -OH when R 1is -OH, R 2is -OH when R 1is C 1-C 8acyloxy, R 2is -O -when R 1is tertiary-amino, R 1and R 2, when taken together, are -O-, n is zero or 1, R 3is C 1-C 6alkylene, and R 4is a heteromonocyclic radical containing O, S, and/or N. Appellants "conservatively" estimate that over 230,000 compounds (including, concededly, theirs) are embraced within this generic disclosure, and the board in turn conceded that, "If this were the only anticipatory disclosure in the reference," the disclosure would be "too diffuse" to support a 102 rejection.

However, the board found: (1) that Flynn's examples 4 and 10 "adequately disclose the exact precursors of the presently claimed compound"; (2) that Flynn's statement that

Cephalosporin C is also readily converted into compounds of the cephalosporin C

4

> type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777.

was adequate to teach how to convert the C-type precursors disclosed in examples 4 and 10 to the C $_A$-type compound claimed by appellants; and (3) that Flynn's statement that, "in general, those compounds which possess the cephalosporin C $_A$nucleus are more effective antibacterially than those containing the cephalosporin C nucleus" provided the "motive * * * to follow this additional teaching * * *." Putting these three findings together, the board held that

> The indicated combination of Example 4 or 10 with * * * [the teaching of how to convert "Cephalosporin C * * * into compounds of the cephalosporin C $_A$type"] is not a matter of obviousness within the meaning of 35 U.S.C. 103 but of direct teaching within the four corners of the patent.

The effect of this holding, of course, was that the board did not have to look at the extensive objective evidence which appellants had offered to rebut any inference of obviousness which might be thought to arise from the teachings of the Flynn patent.

Opinion

[1] The sole issue in this case is whether cephaloridine is "described" in the Flynn patent within the meaning of that word in 35 U.S.C. 102(e). [1] It is to be noted that rejections under 35 U.S.C. *103* are proper where the subject matter claimed "is not *identically* disclosed or described" (emphasis ours) in "the prior art," indicating that rejections under 35 U.S.C. 102 are proper only when the claimed subject matter *is* identically disclosed or described in "the prior art." Thus, for the instant rejection under 35 U.S.C. 102(e) to have been proper, the Flynn reference must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference. Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the *similarity* of the subject matter which he claims to the prior art, but it has no place in the making of a 102, anticipation rejection.

In this case we have no difficulty in deciding that the portions of the Flynn reference relied upon by the Patent Office do not identically describe the claimed subject matter. As appellants point out, the compounds of Flynn's examples 4 and 10 are the "exact precursors" of appellants' compound "only to the extent that appellants have discovered that cephaloridine will be formed *if* the acid [disclosed in example 10] is first selected and *then* carefully reacted with a particular tertiary amine *which also must be selected.* " (Emphasis in original.) Of course, it does appear that the "particular tertiary amine" to which appellants refer is pyridine, which is mentioned elsewhere in Flynn as an example of the class of reactants [2] with which a particular cephalosporin C-type compound (namely, cephalosporin C itself) may be converted into

compounds of the cephalosporin C $_A$type, but there is nothing in the teachings relied upon by the Patent Office which "clearly and unequivocally" directs those skilled in the art to make this selection nor any indication that Flynn ever made the selection himself. Similarly, while it is reasonable to suppose that Flynn's teaching that "in general, those compounds which possess the cephalosporin C $_A$nucleus are more effective antibacterially than those

containing the cephalosporin C nucleus" would provide some "motive" for those that followed him to concentrate their investigations on compounds possessing the cephalosporin C $_A$nucleus, that motivation is a very general one, pointing to no particular one of the myriads of compounds, actual and potential, containing the cephalosporin C $_A$nucleus.

The board, apparently recognizing the weakness of its position in attempting to arrive at an anticipation by combining the disclosures in examples 4 and 10 with the above-quoted teaching elsewhere in the patent of how to convert a particular, different cephalosporin C-type compound into cephalosporin C $_A$-type compounds, postulates certain teachings which might have been in the reference patent any one of which, according to it, if present would have removed all doubt concerning the completeness of the anticipation. [3] The simple answer to the board's argument is that these teachings were not contained in the Flynn patent and that we do not regard the teachings which were there and which *were* relied upon below as the equivalent of those which were postulated by the board. We do not read into references things that are not there.

Although the board declined to discuss four relatively recent decisions by this court in cases involving description requirements in various sections of the patent statute [4] on the ground that "the issue [of anticipation] is essentially a factual one," it did consider the older case of In re Armstrong, 47 CCPA 1084, 280 F.2d 132, 126 USPQ 281 (1960), to be "apposite on this point." There this court reversed the board, finding support for process claims reciting the use of sodium carbonate although the example in the specification advanced as support for the claims used sodium hydroxide. However, in the first place, the Armstrong case was decided well before the line of cases beginning with Ruschig II, supra, [5] which have significantly tightened up on the application of the description requirement in the first paragraph of 35 U.S.C. 112, and, in the second place, the opinion in Armstrong points out that appellants' specification stated that alkali hydroxides and alkali carbonates could be used "interchangeably" in their process. The opinion stresses this equivalency, which involved a tiny number of variables in comparison to the situation here. There are no equivalent "blaze marks," to quote the language of Ruschig II, in the case at hand.

Accordingly, we will not sustain the rejection on the ground on which it was made. Concerning the rejection as it is reformulated by the dissent, we express no opinion. It may be that the Patent Office *should* have relied upon the portions of Flynn on which the dissent relies, or it may be that they had very good reasons for not doing so. In any event, they did *not* rely on those teachings in Flynn, and appellants have therefore had no opportunity to comment thereon.

We do not conceive that it is part of our duty to make better rejections for the Patent Office, even if we could be sure that we really were making a "better rejection," nor do we think that it would be consistent with the requirements of due process for us to do so for the first time on appeal, without notice to the affected party.

[2] Furthermore, we point out that we are not granting appellants a patent, if that is what the dissent means by "bestowing on the applicants a license to litigate." We are simply reversing a rejection on the ground that the claim on appeal is *anticipated* under § 102 by Flynn. It may well be that it is unpatentable because *obvious* under § 103 in view of Flynn,

[3] but no such rejection is before us. The Patent Office is free to make such a rejection after our decision in this case should it think it appropriate. In re Ruschig, 54 CCPA 1551, 379 F.2d 990, 154 USPQ 118 (1967); and In re Fisher, 58 CCPA —, 448 F.2d 1406, 171 USPQ 292 (1971). In any event, it is the Patent Office which grants patents, not this

[4] court. It may further be observed that

it is not now the practice in this court, if it ever was, to apply a different standard in cases which are in "complex areas of technology" than we do in easily understood cases.

The decision of the board is *reversed.*

Footnotes

Footnote 1. At one time appellants contended that Flynn was not an "enabling disclosure," In re LeGrice, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365 (1962), but we gather that they have abandoned that contention on appeal, although there is still an ambiguous reference to LeGrice in their briefs.

Footnote 2. The parties argue, in essence, about whether the words "for example" in the sentence "Cephalosporin C is also readily converted into compounds of the cephalosporin C_A type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777" refers to the word "pyridine" or the words "as described." Appellants argue that "it is to be stressed that pyridine is only being suggested as an *example* of the tertiary amine[s] suitable for the reaction with the prior art compound cephalosporin C," while the solicitor seems to be taking the position that Flynn's specification would be read as indicating that the Belgian patent was one place among many where those skilled in the art could learn how to react cephalosporin C with pyridine. While the matter is not free from doubt, we think it more likely that the sentence would be read in the former way because the presence of the word "type" after "C_A" and not after "C" suggests that one particular C-type compound (namely, cephalosporin C

itself) can be changed into *various* C_A-type compounds by refluxing it with an excess of the proper reactant. This interpretation of the controverted sentence is reinforced by the next sentence in Flynn's specification, which is as follows:

> The reaction is applicable in general to the tertiary amines, of which numerous examples are given above, yielding corresponding derivatives of the cephalosporin $C_A$type wherein the tertiary amine is attached to the methyl group in the 3 position of the thiazine ring, and forms an inner salt with the carboxyl group in the 4 position.

Footnote 3. These postulations were contained in the following passage from the board's opinion:

> There would be no doubt of the completeness of the anticipation if, paraphrasing column 3, lines 47 to 50, the following language were present at the end of each of Examples 4 and 10:
>
> > "This compound is also readily converted into a compound of the cephalosporin $C_A$type by refluxing in aqueous solution with an excess of pyridine, for example, as described in Belgian Patent 593,777."
>
> Likewise, there would be no question of the applicability of column 3, lines 47 to 50, if that sentence were introduced by the words "Any one of the compounds of Examples 1 to 15 is also readily converted into compounds of the $C_A$type * * *" or "Any one of the herein specifically named cephalosporin C compounds is also readily converted into compounds of the $C_A$type * * *."

Footnote 4. In re Ruschig, 52 CCPA 1238, 343 F.2d 965, 145 USPQ 274 (1965); In re Kalm, 54 CCPA 1466, 378 F.2D 959, 154 USPQ 10 (1967); In re McLamore, 54 CCPA 1544, 379 F.2d 985, 154 USPQ 114 (1967); and In re Ruschig, 54 CCPA 1551, 379 F.2d 990, 154 USPQ 118 (1967) (Ruschig II).

Footnote 5. Among the most recent of these are In re Ahlbrecht, 58 CCPA 848, 435 F.2d 908, 911, 168 USPQ 293, 296 (1971); In re Lukach, 58 CCPA 1233, 442 F.2d 967, 969, 169 USPQ 795, 796 (1971); and Fields v. Conover, 58 CCPA 1366, 443 F.2d 1386, 1391-92, 170 USPQ 276, 279-80 (1971).

Concurring Opinion Text

Concur By:

Baldwin, Judge, concurring, with whom Almond, Judge, joins.

While I agree that the disclosure in the Flynn patent is insufficient to constitute an anticipation of the claimed invention, I cannot agree with the language of the principal opinion that for the rejection based on an anticipation to have been proper, "the Flynn reference must

clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference."

The test which determines whether an invention has been anticipated by a reference is whether the description of the invention in the reference is "sufficient to put the public in possession of the invention." In re LeGrice, 49 CCPA 1124, 1131, 301 F.2d 929, 933, 133 USPQ 365, 369 (1962), citing Curtis on Patents, 3d ed., Sec. 378 and Seymore v. Osborne, 78 U.S. (11 Wall.) 516, 555 (1870). See also In re Brown, 51 CCPA 1254, 329 F.2d 1006, 141 USPQ 245 (1964); In re Sheppard, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42 (1964); In re Bird, 52 CCPA 1290, 344 F.2d 979, 145 USPQ 418 (1965); In re Borst, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554 (1965); In re Baranauckas, 55 CCPA 1204, 395 F.2d 805, 158 USPQ 24 (1968); In re Hoeksema, 55 CCPA 1493, 399 F.2d 269, 158 USPQ 596 (1968); In re Wilder, 57 CCPA 1314, 429 F.2d 447, 166 USPQ 545 (1970); and In re Moore, 58 CCPA 1341, 444 F.2d 572, 170 USPQ 260 (1971). I find it unreasonable to assume that Judge Rich and Judge Lane intend to overrule this long line of cases sub silentio. If what they intend is merely to rephrase the accepted test so as to simplify its application, they have missed the mark.

The language used in the principal opinion would not in fact simplify the determination of the suitability of a reference as an anticipation under 35 U.S.C. 102. That language requires the tribunal to analyze the teachings of a reference to determine which are equivocal and which are unequivocal. It must also be determined which disclosures are directly related to each other by the teachings of the reference, thus making picking and choosing proper, and which disclosures are only indirectly related, or are not related at all. This is no simpler than reading the reference as a whole and determining what it fairly teaches to one of ordinary skill in the art.

The more important difficulty with the position taken in the principal opinion is that it misdirects the inquiry. It directs the tribunal to analyze the structure of the reference rather than its content. The real question is not how logically the various disclosures in a reference are related to each other, it is rather *what the reference fairly teaches to one of ordinary skill in the art,* no matter how ineptly it does so. Of course, the more logically the reference is laid out the clearer will be its teachings and the easier will be the job of those who must interpret it. But the law requires us to determine whether the invention has been *identically* described, *not* whether it has been *logically* described by the reference.

The Flynn reference has been described in both the principal opinion and the dissent. I will therefore merely state what I would consider that reference fairly teaches to one of ordinary skill in the art. Flynn does disclose the cephalosporin C $_A$-type precursor of the instantly claimed C $_A$-type compound. The precursor is one of approximately 38 C-type compounds specifically disclosed. Flynn teaches how C-type compounds can be converted to C $_C$-type compounds by heating with water under acid conditions, or converted to C $_A$-type compounds by refluxing in an aqueous solution with an excess of a tertiary amine. Pyridine is specifically referred to as an example of a tertiary amine which will work, but a list of over 15 other tertiary amines is given.

With regard to antibacterial effect, Flynn discloses that C $_C$-type compounds are not as good as C-type compounds, and C-type compounds are not as good as C $_A$-type compounds. As pointed out by the dissent, Flynn considered the C $_C$-type and C $_A$-type analogues of the specifically disclosed C-type compounds to be some of the compounds "available in accordance with the present invention."

I would not place as much weight as the dissent does on Flynn's statement that the C $_C$-type and C $_A$-type analogues were considered within the scope of the invention. Such statements in the specification regarding the breadth of the invention are generally too speculative to be given great weight. In the instant case, all that statement does is focus some additional attention on C $_C$-type compounds and C $_A$-type compounds. In my view, that attention is not a significant addition to the disclosure, since Flynn's remarks regarding the antibacterial activity of the compounds are sufficient to emphasize the C $_A$-type compounds as the most desirable. The difficulty is that Flynn gives 38 or so possible precursors and 15 or so tertiary amines which will react with those precursors to form C $_A$-type

compounds. The Flynn disclosure, considered as a whole, does not sufficiently direct one skilled in the art to the claimed compound.

I disagree with the principal opinion on one last point. The opinion seems to suggest that we violate due process whenever we consider portions of a reference not specifically mentioned by the examiner or the board. I know of no requirement that the examiner and the board must list the sentences in the reference upon which they rely, nor can I see any sense in imposing such a requirement. All of the disclosure of a reference must be considered for what it fairly teaches one of ordinary skill in the art. In re Meinhardt, 55 CCPA 1000, 1004, 392 F.2d 273, 276, 157 USPQ 270, 272 (1968). As Judge Smith aptly stated in Meinhardt:

> [T]he board relied on the same [reference] as the examiner to sustain the rejection. Assuming arguendo that the board relied on a portion of the [reference] ignored by the examiner, this could not constitute a new ground of rejection in view of In re Azorlosa, 44 CCPA 826, 241 F.2d 939, 113 USPQ 156 (1957), which holds, in pertinent part, that it is proper for the court and necessarily, the board, to consider everything that a reference discloses.

In re Meinhardt, supra, 55 CCPA at 1008-09, 392 F.2d at 280, 157 USPQ at 275. See also In re Halley, 49 CCPA 793, 296 F.2d 774, 132 USPQ 16 (1961); In re Van Mater, 52 CCPA 1076, 341 F.2d 117, 144 USPQ 421 (1965).

Dissenting Opinion Text

Dissent By:

Worley, Chief Judge, dissenting.

I cannot agree with the majority that cephaloridine is not "described" in the Flynn patent in the sense of 35 U.S.C. 102(e).

It cannot be said, of course, that cephaloridine per se is *explicitly* named by Flynn, but a clear implicit description is sufficient. In re Baranauckas, 43 CCPA 727, 228 F.2d 413, 108 USPQ 226 (1955). Reference to the Flynn disclosure will establish, I submit, that such a description exists in the present instance.

The principal opinion has set forth portions of the generic and more specific disclosure of Flynn relied on by the board. The class of cephalosporin compounds disclosed generically by Flynn may be divided into several groups, of which the groups designated as cephalosporin C type and cephalosporin C $_A$type (cephaloridine is a C $_A$type) are of particular interest here. [1] After observing that "in general, those compounds which possess the cephalosporin C $_A$nucleus are more effective antibacterially than those containing the cephalosporin C nucleus," Flynn goes on to name and describe several specific compounds having the cephalosporin C nucleus:

> The *following examples,* together with the [*15*] *operating examples* appearing hereinafter, will illustrate the types of compounds available *in accordance with the present invention:*
>
> > [There follows a list of 24 specific 7-acylamidocephalosporanic acids, i.e., cephalosporin C type compounds. As noted by the board, two of the 15 operating examples referred to, examples 4 and 10, describe the potassium and sodium salts of 7-(2¢-thienyl-acetamido) cephalosporanic acid (the sodium salt is known commercially as "cephalothin"). Appellant reacts that particular cephalosporanic acid with the tertiary amine pyridine to obtain the claimed cephalosporin C $_A$type compound, cephaloridine.]
>
> and the like, *including* the *cephalosporin C $_A$* and cephalosporin C $_C$ *analogues thereof.* [Emphasis supplied.]

There can be no doubt from the above disclosure that Flynn regarded the cephalosporin C $_A$analogues of each of the mentioned cephalosporin C type compounds to form an integral part of his disclosed invention. In particular, it is evident that Flynn does explicitly disclose the cephalosporin C $_A$analogues of Examples 4 and 10. As to how to obtain those C $_A$analogues from cephalosporin C type compounds, he states that compounds of the cephalosporin C $_A$ class "can be obtained by applying to appropriate 7-acylamidocephalosporanic acids the conversion procedures of Belgian Patent 593,777." Flynn had earlier stated, as pointed out by the board and majority here just what those "conversion proceudres" are, viz., that "Cephalosporin C is also

readily converted into compounds of the cephalosporin C $_A$type by refluxing in aqueous solution with an excess of *pyridine,* for example, as described in Belgian Patent 593,777." [2] [Emphasis supplied.]

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I think it is clear that Flynn directs one of ordinary skill in the art, who is interested in particular cephalosporin C $_A$analogues of the 37 or so cephalosporin C type compounds Flynn specifically discloses, to prepare them by reacting the appropriate 7-acylamido cephalosporanic acid with the particular tertiaryamine pyridine. Following those instructions, one of ordinary skill in this art would easily prepare the C $_A$(pyridine) analogue of the particular cephalosporin C type compound described in Examples 4 and 10, which analogue is cephaloridine. Each and every one of the C $_A$(pyridine) analogues of that relatively small number of cephalosporin C compounds has been effectively, or implicitly, described by Flynn. To be sure, appellant is claiming only one of them, but it is no less described than any of the others.

From what has been said of Flynn, it should be evident that there is no need in this case for those skilled in the art to resort to picking and choosing various disclosures unrelated to each other by the reference teachings, as the principal opinion implies. On the contrary, the disclosures of cephalosporin C compounds, cephalosporin C $_A$compounds, and how to make them are all interrelated by Flynn himself. It should also be evident that the reference itself contains the full equivalent of the board's "postulations", which are quoted in footnote 3 and later deprecated in the principal opinion. Finally, it should be evident that the rejection rationale as stated herein is substantially identical to-not a reformulation of-that expressed by the board.

The principal opinion also criticizes the board for reading into references "things that are not there." My difficulty with that position stems from its disregard for the "things"-or "blaze marks"-that *are* there. In my opinion, the majority is groping for reversible error where none exists. As far back as 40 years, and over the years since, it has been a firm principle that this court would not reverse decisions of the tribunals below in highly complex areas of technology unless manifest error was shown. See, e.g., In re Wietzel, 17 CCPA 1079, 39 F.2d 669, 5 USPQ 177 (1930); In re Bertsch, 30 CCPA 813, 132 F.2d 1014, 56 USPQ 379 (1942); In re Stoll, 34 CCPA 1058, 161 F.2d 241, 73 USPQ 440 (1947). Needless to say, such error has not been shown here.

Although the majority would undoubtedly disclaim the notion, I cannot help but feel that it is resolving doubt on the issue presented in favor of the applicants. In doing so, this court is not doing the applicants or the public any favor. Rather it is bestowing on the applicants a license to litigate of dubious validity at a time when, it is reliably estimated, 80% of contested patents are being held invalid in other federal courts. And the other sad result here is to take from the public that which is already theirs by imposing on them a monopoly that should not exist. Appellants

have given the public nothing it had not already been given by Flynn. I would remind my colleagues that patents are not like party favors to be passed out at random. The enabling statutes established under the Constitution clearly require more than appellants have offered as a quid pro quo to the public in exchange for the monopoly the majority awards them.

I find no error in the board's decision, and would affirm.

Footnotes

Footnote 1. For purposes here, cephalosporin C_A type compounds differ from cephalosporin C type compounds in the R 1substituent attached to the methyl group located at the 3 position of the basic cephalosporin (cephem) nucleus. The C_A type compounds have a tertiary amine attached to that methyl group, where as the C type compounds have an acyloxy group so attached. See the formula and definitions under "The Rejection" portion of the principal opinion. Cephaloridine has a pyridine radical attached to the 3-methyl group.

Footnote 2. Belgian 593,777 does indeed disclose obtaining of "antibiotic substances which are transformation products of Cephalosporin C and are called Cephalosporin C_A compounds" by "treatment of Cephalosporin C in aqueous solution with a weak, tertiary base, for example pyridine, collidine or quinoline. If pyridine is used, the antibiotic obtained is called Cephalosporin C_A(pyridine)."

- End of Case -

In re Antonie

(CCPA)
195 USPQ 6

Decided Aug. 18, 1977
No. 76-681
U.S. Court of Customs and Patent Appeals

Headnotes

PATENTS

1. Patentability -- Invention -- In general (§ 51.501)

Court of Customs and Patent Appeals must first delineate invention as whole in determining whether invention as whole would have been obvious under 35 U.S.C. 103; it looks not only to subject matter that is literally recited in claim in question but also to those properties of subject matter that are inherent in subject matter and are disclosed in specification, in delineating invention as whole; just as chemical and its properties are looked to when obviousness of composition of matter claim is examined for obviousness, invention as whole, not some part of it, must be obvious under Section 103.

2. Patentability -- Invention -- In general (§ 51.501)

Controlling question in determining obviousness is simply whether differences between prior art and invention as whole are such that invention as whole would have been obvious.

3. Patentability -- Invention -- In general (§ 51.501)

Standard of 35 U.S.C. 103 is not that it would be obvious for one of ordinary skill in art to try invention; disregard for unobviousness of results of "obvious to try" experiments disregards "invention as a whole" concept of Section 103, and overemphasis on routine nature of data

gathering required to arrive at applicant's discovery, after its existence became expected, overlooks last sentence of Section 103.

4. Patentability -- Change -- In general (§ 51.251)

Patentability -- Invention -- In general (§ 51.501)

Exception to rule that discovery of optimum value of variable in known process is normally obvious occurs when parameter optimized was not recognized to be result effective variable.

Particular patents -- Contactor Apparatus

Antonie, Rotating Biological Contactor Apparatus, rejection of claims 1-3 reversed.

Case History and Disposition:

Page 6

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Ronald L. Antonie, Serial No. 331,796, filed Feb. 12, 1973. From decision rejecting claims 1-3, applicant appeals. Reversed; Miller, Judge, concurring in result; Maletz, Judge, with whom Rich, Judge, joins, dissenting with opinion.

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Attorneys:

Arthur H. Seidel, Thomas W. Ehrmann, and Quarles & Brady, all of Milwaukee, Wis., for appellant.

Joseph F. Nakamura (R. D. Edmonds, of counsel) for Commissioner of Patents and Trademarks.

Judge:

Before Markey, Chief Judge, Rich, Baldwin, and Miller, Associate Judges, and Herbert N.

Maletz, * Associate Judge, United States Customs Court.

Opinion Text

Opinion By:
Baldwin, Judge.

This is an appeal from a decision of the Patent and Trademark Office (PTO) Board of Appeals (board) affirming the rejection of claims 1, 2 and 3 of an application for "Rotating Biological Contactor Apparatus" [1] as obvious under 35 USC 103 in view of El-Naggar. [2] We reverse.

The Invention

Appellant claims a wastewater treatment device in which wastewater is continuously passed through a tank. Semi-immersed contactors (disks) are continuously rotated to aerate their immersed portions and thereby to aerate both microorganisms that grow on the contactors and the wastewater itself. For this discussion, several variables are important in this device. "Throughput" is the volume of wastewater per unit time (gal./day) which the device must treat. "Contactor area" is the total area of the contactors which is exposed to the wastewater as the contactors are rotated (sq. ft.). "Tank volume" is the actual volume of liquid in the tanks in which the contactors rotate (gal.). The ratio of throughput to contactor area (gal./day/sq. ft.) is called the "hydraulic loading." Two concepts of effectiveness of the equipment are important in this discussion. The primary prior art reference uses the term "efficiency" to denote the percent impurity reduction which a given set-up of the device achieves and we shall so use the term. Appellant uses the term "maximum treatment capacity" to denote when a *unit of contactor area* is providing maximum "efficiency" for a given "throughput" or maximum "throughput" for a given "efficiency." It is essential to understand the distinction between "efficiency," a matter of ultimate effectiveness independent of the efficiency of the equipment, and "treatment capacity," a matter of the efficiency or effectiveness of a unit of contactor area. The latter is more properly associated with the normal use of the term "efficiency" denoting maximum result from a limited resource.

Appellant's claimed device has a ratio of tank volume to contactor area of 0.12 gal./sq. ft. [3] Appellant maintains that this ratio is the most desirable or optimum for all set-ups of the device in the sense that using a lower value gives lower "treatment capacity" and using a greater value gives no increase in "treatment capacity," merely increasing costs. Thus, the value is optimum in that it maximizes "treatment capacity" so that the effectiveness of a given contactor is maximized.

The Prior Art

El-Naggar teaches the basic structure of the device claimed by appellant but is silent regarding quantitative design parameters other than to give data on a single example, which data

was apparently complete *except for any discussion of "tank volume."* El-Naggar stated the "efficiency" (obviously referring to the purity of the output) could be increased to 95% by increasing the area of the contactor.

The Rejection

The examiner rejected the claims as obvious under 35 USC 103, noting that the basic device in question is old as taught by El-Naggar. While the ratio of tank volume to contactor area of 0.12 gal./sq. ft. is not disclosed in El-Naggar, the examiner reasoned that the disclosure of El-Naggar would make a device with that optimum value obvious. The examiner noted that El-Naggar suggests increasing the "efficiency" (degree of purification) of his device by increasing the contactor area while apparently keeping the "throughput" constant, that is, reducing the "hydraulic loading." The examiner then *assumed* that El-Naggar teaches keeping the tank volume constant while increasing the contactor area. Thus, the examiner argued that the idea of increasing tank volume to surface area to increase efficiency is taught and that working out the value for optimum efficiency is mere mechanical experimentation. The board accepted the examiner's reasoning.

Opinion

[1]In determining whether the invention as a whole would have been obvious under 35 USC 103, we must first delineate the invention as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question (the ratio value) but also to those properties of the subject matter which are inherent in the subject matter *and* are disclosed in the specification. In re Davies, 475 F.2d 667, 177 USPQ 381 (CCPA 1973). In this case, the invention as a whole is the ratio value of 0.12 *and* its inherent and disclosed property. That property is that the described devices designed with the ratio will maximize treatment capacity regardless of the values of the other variables in the devices. Just as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention *as a whole,* and not some part of it, which must be obvious under 35 USC 103. Cf. In re Papesch, 50 CCPA 1276, 315 F.2d 381, 137 USPQ 43 (1963).

[2]The controlling question is simply whether the differences (namely the value of 0.12 and its property) between the prior art and appellant's invention as a whole are such that appellant's invention as a whole would have been obvious. The answer is no. It is impossible to recognize, from the experiment taught by El-Naggar, that "treatment capacity" is a function of "tank volume" or the tank volume-to-contactor area ratio. Recognition of this functionality is essential to the obviousness of conducting experiments to determine the value of the "tank volume" ratio which will maximize treatment capacity. Such functionality can *only be determined* from data representing either efficiency at varying tank volume, fixed throughput, and fixed contactor area or throughput at varying tank volume, fixed efficiency, and fixed contactor area. Each of these

experiments represents treatment capacity with fixed contactor area but varying tank volume. This sort of experiment would not be suggested by the teachings of El-Naggar since he was not trying to maximize or control "treatment capacity." The experiments suggested by El-Naggar do not reveal the property which applicant has discovered, and the PTO has provided us with no other basis for the obviousness of the necessary experiments.

[3]The PTO and the minority appear to argue that it would always be *obvious* for one of ordinary skill in the art *to try* varying *every* parameter of a system in order to optimize the effectiveness of the system even if there is no evidence in the record that the prior art recognized that particular parameter affected the result. [4] As we have said many times, *obvious to try* is not the standard of 35 USC 103. In re Tomlinson, 53 CCPA 1421, 363 F.2d 928, 150 USPQ 623 (1966). Disregard for the unobviousness of the results of "obvious to try" experiments disregards the "invention as a whole" concept of §103, In re Dien, 54 CCPA 1027, 371 F.2d 886, 152 USPQ 550 (1967) and In re Wiggins, 55 CCPA 1356, 397 F.2d 356, 158 USPQ 199 (1968), and overemphasis on the routine nature of the data gathering required to arrive at appellant's discovery, after its existence became expected, overlooks the last sentence of §103. In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974).

[4]In In re Aller, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955), the court set out the rule that the discovery of an optimum value of a variable in a known process is normally obvious. We have found exceptions to this rule in cases where the results of optimizing a variable, which was known to be result effective, were unexpectedly good. In

re Waymouth, 499 F.2d 1273, 182 USPQ 290 (CCPA 1974); In re Saether, supra. This case, in which the parameter optimized was not recognized to be a result-effective variable, is another exception. The decision of the board is reversed.

Footnotes

Footnote 1.

Serial No. 331,796, filed February 12, 1973.

Footnote 2. "Method of Treatment of Sewage by Bio-Oxidation and Apparatus Therefor," U.S. Patent No. 3,335,081, issued August 8, 1967.

Footnote 3. Claims 1 and 2 recite "at least about 0.12" while claim 3 recites "about 0.12."

Footnote 4. The precise nature of the El-Naggar experiment and the nature of the data which would result are rendered hopelessly speculative by El-Naggar's total failure to discuss the critical matter of what is done with the volume of the tank. The PTO appears to assume, as a necessary element of its conclusion, that appellant's ratio is the inevitable result of El-Naggar

experiment, and that the tank volume is fixed, apparently because El-Naggar does not suggest changing the tank as additional contactor area is supplied. Even if the same tank were used, the actual liquid volume of the tank could change significantly if 1) the tank has a level control, 2) the tank is not extremely large in comparison to the contactors and 3) the volume-to-area ratio of the contactors themselves is significant. Since these assumptions are not unreasonable, there is serious doubt as to the constant volume of the tank.

Whether one would inevitably arrive at the ratio value of 0.12 or above depends on facts which must be read into El-Naggar, (e.g., the volume of the tank) and on assumptions about the kind of motivation (e.g., the degree of "efficiency" which would be sought). All of this involves, at least on this record, mere speculation. Assuming, as the examiner has, that the tank volume is fixed and the natural motivation is to maximize efficiency, if El-Naggar's equipment has a tank volume to contactor area ratio of less than 0.12, and the resulting efficiency is found wanting, increasing the contactor area to increase "efficiency" will lead away from the claimed ratio.

Dissenting Opinion Text

Dissent By:

Maletz, Judge, with whom Rich, Judge, joins, dissenting.

With all due respect, I cannot agree with the majority's interpretation of the El-Naggar patent. El-Naggar discloses the same wastewater treatment apparatus as claimed, except for the specific volume-to-surface ratio of .12 gallons per square foot as recited in the claims. However, El-Naggar generally discloses varying the number of disks (column 3, lines 31-35), the number of concentric cylinders (column 4, lines 27-30), or the length of the cylinders (column 4, lines 61-62) in his apparatus in order to optimize results. Given the basic apparatus of El-Naggar and the concept of varying the number of disks in a tank in order to optimize impurity removal, I believe that it would have been well within the capabilities of the chemical engineer of ordinary skill to determine empirically, by routine experimentation, the optimum design ratio which appellant has determined and recited in his claims. That is, El-Naggar set the way, and appellant's work was what any routineer would have accomplished in following the patent teachings.

Appellant urges that the results which he determined empirically by plotting the effect of volume-to-surface ratio on impurity removal, including the specific, optimum design ratio of .12 gallons per square foot, could not have been predicted from El-Naggar. However, obviousness under 35 USC 103 does not require absolute predictability, In re Kronig, 539 F.2d 1300, 190 USPQ 425 (CCPA 1976), and it is sufficient here that El-Naggar clearly led the way for the routineer to arrive at the claimed apparatus.

I am in substantial agreement with the board's analysis of this case, and I would affirm the board's decision.

Footnote * Judge of the United States Customs Court sitting by designation pursuant to 28 U.S.C. 293(d).

- End of Case -